

CLAIMS

[1] A copper-based alloy having soundness of alloy improved during a course of solidification of the copper-based alloy by crystallizing an intermetallic compound capable of solidifying at a temperature exceeding a solidus line in dendritic gaps of the alloy, suppressing migration of a solute, thereby allowing dispersion of microporosities, utilizing crystallization of the intermetallic compound as well for effecting dispersed crystallization of a low melting metal or a low melting intermetallic compound capable of solidifying at a temperature falling short of a liquidus line, and relying on the low melting metal or low melting intermetallic compound to enter the microporosities and suppress occurrence of microporosities.

[2] A copper-based alloy according to claim 1, wherein at least 5.0 to 10.0 weight% of Zn and $0 < \text{Se} \leq 1.5$ weight% of Se are contained and ZnSe is crystallized as an intermetallic compound in the dendritic gaps of the alloy during the course of solidification of the copper-based alloy.

[3] A copper-based alloy according to claim 1 or 2, wherein the intermetallic compound has a surface ratio of 0.3% or more and 5.0% or less.

[4] A copper-based alloy according to any of claims 1 to 3, wherein at least 0.25 to 3.0 weight% of Bi is contained and Bi is crystallized as the low melting metal in a region of the solute during the course of solidification of the copper-based alloy.

[5] A copper-based alloy according to claim 1 or claim 4, wherein the low melting metal or low melting intermetallic compound has a surface ratio of 0.2% or more and 2.5% or less.

[6] A copper-based alloy according to any of claims 1 to 5, comprising at least 5.0 to 10.0 weight% of Zn, 2.8 to 5.0 weight% of Sn, 0.25 to 3.0 weight% of Bi, 0

$< \text{Se} \leq 1.5$ weight% of Se, less than 0.5 weight% of P, the balance of Cu, and less than 0.2 weight% of Pb as an unavoidable impurity.

[7] An ingot using the copper-based alloy according to any of claims 1 to 6 or a liquid-contacting part having the copper-based alloy mechanically formed.